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ROBERT J WARD ESQ
WORSHAM FORSYTHE & WOOLDRIDGE LLP
ENERGY PLAZA 30TH FLOOR
1601 BRYAN STREET
DALLAS, TX 752013402

EXAMINER

PADGETT, MARIANNE L

ART UNIT	PAPER NUMBER
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1762

13

DATE MAILED: 05/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

SS

Office Action Summary

Application No.

09/427775

Applicant(s)

Kidd et al

Examiner

M.L. Padgett

Group Art Unit

1762

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- ☒ Responsive to communication(s) filed on 8/31/01, 1/7/02 & 3/27/02
- ☒ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-17, 24-25, 27-50, 52-62, 64-88, 90-103, 105, 111-114, 117-129 & 132 is/are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-17, 24-25, 27-50, 52-62, 64-88, 90-103, 105, 111-114, 117-129 & 132 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☐ All ☐ Some* ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. _____.
- ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 8, 11 & 12
- ☐ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

Office Action Summary

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1. Claims 1-17, 24, 25, 27-50, 52-62, 64-88, 90-103, 105, 111-114, 117-129 and 132 are objected to or rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1 and 129, the January 7, 2002 amendment has improved the clarity, however the independent claims are ambiguous as to whether the heating of the depositant is what causes the plasma to be generated, or previously listed steps are also involved. The juxtaposition implies that it's the heating, however order of listing does not necessitate any order of doing, unless temporal or antecedent limitations are present. Plasma generation must be after or with the heating due to the presence of depositants, but whether not either of the DC or RF signals are involved, is unclear as written. However, most practitioners in the art would have expected the DC voltage and/or the RF power to be the main contributing factors for generating the plasma, since heating does not generally cause ionization, and given the process limitations listed in the claims generally do, hence the intent of the method steps is still ambiguous. As was noted, there is language in the specification matching that of the original claims on page 3 in the summary, and there is also discussion (page 5, lines 10-20 and page 32, lines 28-33) of plasma creation due to RF usage and thermionic phenomena. When current through a filament is used to produce heating (page 10 of specification, or claim 111), such a source of energy has also been known to cause ionization via thermionic effects, but the independent claims as written presently do not necessitate such, and are ambiguous on what generates the plasma. Note this may be considered to be related to the fact that when the "reducing...flowing" and two "applying..." steps are performed with respect to the "heating ... plasma is generated..." is unspecified.

Use of "a" or no article for limitations that have previously introduced and lacking clear differentiation, is objected to as confusing the antecedent basis of those limitations. Are they intended to be new (i.e. unrelated) terms, hence need clear differentiation, or should they use the articles --the-- or --said-- ? In claim 2, see "a rate" used multiple times, and "a gas" (lines 4-5, marked up version) where both were first introduced in claim 1; in claim 3 see "a voltage amplitude" (lines 2 and 4), "a negative DC signal" (lines 3 and 4 marked up version). Why are entire previous ranges, and limitation steps being repeated? It only causes confusion, especially when proper articles for showing antecedent basis are missing, and can be said to be vague and indefinite due to the presence of 2 sets (or more) of ranges in one claim. To reiterate, repeating already claimed limitations, as is done in for example claims 2, 4, etc., is verbose, obscures the intended further limiting aspect of the claims, and is causing many of the above listed antecedence and article problems. Other claims with antecedent basis and range problems analogous to claims 2 and 3, include claims 7 and 121-124.

In claims 1 and 7 (or the like), it is noted that if reducing the initial pressure gives the claimed limit of 4 or 1.5 mtorr, respectively, that it is impossible to raise the pressure to the subsequently claimed range, since both sets of ranges have the same maximum pressure. Applicants may wish to consider this logic problem with respect to their claimed steps.

Use of relative terms that lack clear metes and bounds is vague and indefinite, unless clear definitions are provide in the claims, specification or cited relevant prior art. While the January 7, 2002 amendment removed part of the relative terms in claims 112 and 114, ones remain that have no clear bounds for determining what degree of differentiation in the heating

would be considered uneven or non-uniform. In claim 112, see "even", and in claim 114 "uniformly".

In claims 34-39, 42-47, 53 and 55, the words "base", "transition" or "working" is used before "layer," however no context in the claims provides these modifiers with any clear or necessary meaning, i.e. all the claims continuing these words merely read on deposition of a single layer (except in claims 53 and 55), such that there is no clear difference between claims that have no other difference. For example, claims 34, 36 and 38 as presented, claim the same limitations. Applicants have alleged that the terms are defined in the specification, but failed to cite any such clear definitions, that provide definite metes and bounds.

Claims 36-39 and 44-47 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. See reasons as discussed immediately above.

Claims 41-47 are objected to, since "the evaporation source" can refer to either source discussed in claim 40, as the differentiation is incomplete. Note similar language in claim 48 creates analogous problems in claims 49, 50, 53 and 55 for "the depositant".

In claim 49, "the total mass" (both occurrences) is objected to as lacking proper antecedent basis.

Claims 56 and 57 rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Page 30 of applicant's specification teach frequencies between 10 kHz to 100,000 MHz, as well as 13.56 kHz, but no ranges corresponding to those of amended claims 56 or 57 were found, hence they constitute New Matter

In claim 61, the meaning of "white metal clean" for a generic unspecified substrate is not known to the examiner, so cannot be effectively examined. Applicants allege it is well known to one of ordinary skill, but have provided no definition in support of their allegation, let alone one that can be applied to a substrate made of any material. While the specification uses the term on page 22, line 28, it does not define its meaning. Claims 62-66 concern "Steel Structures Painting Council (SSPC)" standards, which while as discussed on page 22, are not defined there, nor did applicants provide any literature that describes what these abbreviations "SSPC-5" or "SSPC-10" stand for, hence no examination on these unknown procedures can be made. Note the "a defined standard" of claim 63, can be whatever anybody decides they want, so lacking clear metes and bounds, is relative.

In claim 102, the term "silver/palladium" is still ambiguous as it is uncertain if the slash represents "or", "and" or "and/or" (all are known interpretations), thus the scope is unclear.

Claim 114 is objected to, since "the amplitude" (emphasis added) maybe considered to refer to "a voltage amplitude" introduced in claim 1, line 7, but is directed in the dependent claim to the current limitations of claims 111 or 113, thus may cause confusion.

In claim 117 "the addition" is objected to as lacking proper antecedent basis.

In claim 120 "can be controlled" is NOT a positive limitation, because it does not necessitate the stated action or effect ever taking place, only that its possible, hence whether or not the thickness is actually intended to be claimed is unclear. Note that "a layer" in this claim is not formally related to the independent claim of "the depositant ions are plated on a surface...".

In claim 122, it is still unclear how the terms in this claim, i.e. "the pressure" (line 4); "a gas" (line 6); "a rate" (line 7); "a dc signal" (line 9, now partially differentiated); "a voltage amplitude" (lines 9-10); "a radio frequency signal" (line 11); "a power level" (line 12); "a power level" (line 12); etc., relate to the same or analogous terms that are present in the independent

claim. Appropriate differentiation of the term limitation or use of articles to indicate clear antecedent basis is needed for the back sputtering (i.e. sputter etching) step. Also, see claims 123-128.

In claim 128, "the rate of visible microarcing" is objected to as lacking proper antecedent basis. Also, what are the metes and bounds defined by the prefix "micro-" in microarcing"? Page 36 of the specification appears to indicate that microarcing is not actually referring to size, but is the name for the sparking effect of capacitive discharges that are occurring. Is this correct?

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 4, 5, 27-47, 52-62, 64-81, 87-88, 90-95, 98-102, 105, 111-114, 117-118, 129 and 132 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grosman et al (5,078,847).

Grosman et al teach an ion planting process employing a combination of RF and DC power sources to bias the substrate, and may use an AC source to cause a filament surrounding the deposition material, to heat, melt and vaporize that material (abstract; figures 2 and 3; col. 5, lines 9-62). The process chamber is evacuated and an inert gas, such as Ar, is metered into the chamber through a valve, where vacuum pressure of 4×10^{-4} torr (i.e. 0.4 mtorr) or 4×10^{-6} motor (i.e. 4×10^{-3} mtorr), all within claimed ranges are taught to be effected (col. 5, lines 11-21). It is not clear in Grosman et al exactly how these two pressures are related to each other and addition of inert gas, however since it is conventional in the vacuum arts to

achieve a base pressure, then add desired gas achieving an operating pressure, it would have been obvious to one of ordinary skill in the art to achieve a maximum vacuum (minimum pressure) at stabilized pressures as taught by Grosman, then add their desired plasma gases to achieve useful operating pressures. Note that gas input plus pump equates with gas flowing through the chamber. All Grosman et al's pressures read on the two pressure ranges claimed by applicant, and 4×10^{-4} torr is within the gas introduction pressure range. Note "an initial pressure" may be considered to read on the pressure before pumping down, etc. Being the higher of the two taught values would have been suggestive of an operating pressure to one of ordinary skill.

On col. 2, lines 32-46, use of -DC on the substrate and of +DC on the source material is taught, and on col. 4, lines 10-28 and Fig. 1, Grosman et al discuss, -DC coupled with RF of 2-40 MHz applied to the substrate, with 10-800 KHz applied to the source, as typical prior art ion plating. Also, Grosman et al teachings may connect a (+)DC voltage supply to the substrate (col.2, lines 47-65; col.4, lines 60-68; and col.5, lines 22+) with the RF power being described as typically "at a frequency of 13.56 kilohertz" (col.5, lines 47-51). It is taught that D.C. source 26 (connects to substrate) controls the plasma field and that a voltage up to 400 volts may be used (col. 5, lines 35-42).

While Grosman et al provides no teachings on typical power level parameters for the RF applied to the substrate, it would have been obvious for one of ordinary skill in the art to supply such values via routine experimentation depending on particular substrates (material, size dimension, etc.) that are being treated, hence values as claimed would have been expected to have been included in those effective, depending on the substrate being coated.

As indicated in Fig. 2 and discussed on col. 4, lines 60-col. 5, line 5, Grosman et al teach the use of a capacitor 24A and RF choke coil 27A, or other conventional means, when

combining the RF and DC signals, in order to prevent problems, such as shorting. This appears equivalent to applicant's claims of minimizing standing wave reflected power, as the specification discussion thereof (page 31) provides the same types of means to achieve the end, and because balancing with the respect to impedance with electrical characteristic discussed therein, would appear to be equivalent in meaning to preventing shorting.

Grosman et al. teach material to be vaporized is wrapped around a filament, depicted as a coil and placed in the vacuum chamber. The configuration suggests wires, ribbons, strips, etc. Single or multiple filaments may be used, alloy formed, and vaporizing materials are suggested to include Al, Cu, Au, Pt, Ag, Ti and "other conventional vaporizing materials" (col. 4, lines 37-47, and col. 6, lines 21-24). While Cr, Sn, Ni, In, Pd and Pb are not specifically mentioned, they are conventional, hence obvious as suggested conventional materials. Distances between filaments and/or substrate and filaments are not discussed, but such parameters would have existed, and placements would have been determined via routine experimentation, where sizes and configurations of both substrates and sources would have been considered in determining relevant values.

While Grosman et al do not discuss cleaning before coating, it is a standard processing technique, because relatively few coatings, ion plated or not, will adhere well to dirty substrates. Use of known industrial standards, when treating objects those standards apply to, would have been conventional operations, hence obvious for their intended purposes.

As Grosman et al teach inert gases (i.e. noble gases) in general, as well as Ar specifically, use of any inert gases, He, Ne, Kr, Xe or Rn would also have been obvious as suggested by the generic category, since the class of noble gases all have homologous chemistry and is relatively small.

Thickness of coating will depend on what is being coated, and desired effect, where the number of filament sources and/or separate sequential depositions will determine final thickness (col. 6, lines 12-20). Note that the suggestions of separate layers in sequence, covers all applicant's multiple layer depositing claims, because none of the claims have any significant difference between any of the layers, i.e. are as generic as Grosman et al's teaching.

4. Claims 1-5, 7, 8, 15-17, 19-25, 27-28, 32-50, 52-57, 59-62, 64-81, 83-88, 90-95, 98-103, 105, 111-114, 118-129 and 132 are rejected under 35 U.S.C. 103(a) as being unpatentable over White (4,420,386 or 4,468,309).

Both White patents (386) and (309), teach ion plating techniques that use combined DC and RF sources to bias the substrate, and may use any suitable vaporization source, including filaments, with AC power sources to supply vaporized coating materials. Besides the illustrated filaments, refractory boats are mentioned. The examiner takes notice that tungsten (W) is a refractory metal, typically used for holding vaporization material; hence W-filamentary structures to hold evaporants would have been obvious types of filaments. The processes teach that no gas is required for ionization, however use of slight amounts of inert gas to provide uniformity over irregular surfaces is suggested, exemplified by Ar at pressure below the typical 10-20 microns (i.e. below 10-20 mtorr) needed for ionization. Therefore, it would have been obvious to one of ordinary skill in the art, to initially pump out their vacuum chambers in order to obtain suitable vacuums, and then optimize the pressure at somewhere below 10 mtorr as well as inputting the taught slight amount of inert gas at these pressures, via routine experimentation. This would have been expected to be inclusive of pressure values as claimed, as they are close to the values taught. Examples use 3-5 KV (3000-5000 volts) to negatively bias the substrate holder 58 and attract positive ions as discussed ((309): col. 5, lines 34-43).

Precleaning of substrates, via plasma sputtering from inert gas ion bombardment is taught as a preparatory step (i.e. the same thing as backsputtering), where the use of RF is noted to cause better cleaning than DC, where initial evacuations to 10^{-4} mmHg (10 mtorr), then addition of gas to an exemplary pressure of 10-20 microns (10-20 mtorr), for cleaning is taught. While only the RF is noted as necessarily used for cleaning, use of the entire RF plus DC combination of voltages when cleaning, would have been obvious, as effective for providing ion attraction and uniform treatment of the substrate, which would also have been important for cleaning.

The White patents, both teach various fixtures or platforms for holding substrates, with (386) Fig. 1 and col. 2, lines 48-58 explicitly showing multiple (or arrays of) substrates; and (309) showing annular holders (58) or ones that include power rollers to manipulate the substrate (Fig. 7). Both (386) and (309) teach the possible use of multiple filaments, as well as possible multiple coatings. White (386) specifically discloses evaporates of Au, Cu, Ag or Al; while White (309) has an analogous, but more extensive list including Au, Ag, Pb, Sn, In, Pd, Cu, Cr, Ti, metal carbides, metal nitride, ceramics and cements, with multicoating examples of layer sequences, such as Ti/TiC/TiN, with total thickness of 10,000 to 12,000 angstroms or individual layer thickness that may be exemplified by 2000 Å, 1000 Å, 500 Å, etc... Note how much of any one depositant one applies will vary with desired effects and materials used.

White (386) or (309) apply a DC negative bias of 3 to 5 Kvolts, plus an RF bias source to the substrate to attract positive ions of the plasma towards the substrate, while the filaments are resistance heated by AC being passed through them, thus causing vaporization of source material, which will inherently include heating to a temperature at or above the melting point. While no RF parameters are disclosed, one of ordinary skill in the art would have found use of typical standard industrial frequencies, such as 13.5 MHz an obvious option, and would also

have determined useful power levels via routine experimentation, taking into consideration important geometric and size factors that will effect power needed for effective and/or equivalent results (i.e. the same power applied to objects of unknown size, shape and constituents, has little significance by itself).

In White (386), see the abstract; Fig. 1; col. 2, lines 28-38 and 48-col. 3, line 58; col. 4, lines 3-39; col. 5, lines 10-30, and claims 1, 4, 5 and 7-14. In White (309), see the abstract; figures 4, 5, 7; col. 2, lines 38-46 and 58-68; col. 3, lines 10-68+; col.4, lines 49-col.5, lines 9, 20-54 & 63-68+; col. 7, lines 38-48 and claims 1-8, etc.

Note that inert gas in general and Ar, as an example, are again taught, hence reasons for obviousness of all inert gases are again applicable.

5. Claims 29-31 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over White (386 or 309) as applied to claims 1-5, 7-8, 15-17, 19-25, 27, 28, 32-50, 52-57, 59-62, 64-81, 83-88, 90-95, 98-103, 105, 111-114, 118-129 and 132 above, further in view of Grosman et al as applied above, particularly to claims 29-31 and 58.

While the White references teach combining DC and RF currents, they provide no specific electronic teachings on doing so, however the Grosman et al reference shows that use of particular electronic configurations, such as capacitors and the like, to prevent shorting damage, etc., would have been beneficial to any such mixed current sources, hence obvious too apply like safety features to the White references.

Grosman et al also shows that the specific frequency of 13.56 KHz (as opposed to 13.56 MHz), is known for use in mixed DC and RF biasing during ion plating, hence would have been obvious to use for the White references' unspecified frequencies.

6. Claims 8-14 and 117 are rejected under 35 U.S.C. 103(a) as being unpatentable over White (386 or 309) as applied to claims 1-5, 7-8, 15-17, 19-25, 27-28, 32-50, 52-57, 59-62,

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64-81, 83-88, 90-95, 98-103, 105, 111-114, 118-129 and 132 above, and further in view of White (4,667,620).

The White (386) or (309) references do not discuss rotating platforms for holding substrates for ion plating or coating without magnets, however White (620) which has an analogous substrate bias and filament source system, teaches optional use of magnets and substrate(s) on rotating platforms (abstract; figures 1 and 2; col. 2, lines 54-col. 3, line 10 and lines 32-col. 4, line 10 and lines 37-55), hence it would have been obvious to one of ordinary skill in the ion plating art that rotating platforms and configurations as taught in (620) would have been expected to have been applicable to ion plating techniques of (386) or (309), because they use the ~~same~~ ^{same} principles to cause coatings in all references. Also note that White (620) specifically discusses ~~he~~ ^{the} use of a commutator or a conductive brush for applying the bias to the substrate, via the substrate holder in reference No. 33 and col. 3, lines 5-10. Rates of revolution will depend on deposition rates, surface areas to coated, substrate shape, etc., and be optimized accordingly. Note (620) also teaches coating possibly 500 Å to 5000 Å thick, showing like control capabilities.

7. White (4,673,586) can be considered analogous to (620) for the rejection of section 6 above, as it contains analogous teachings.

8. Claims 96, 97 and 103 are rejected under 35 U.S.C. 103(a) as being unpatentable over White (386) or (309) as applied to claims 1-5, 7-8, 15-17, 19-25, 27-28, 32-50, 52-57, 59-62, 64-81, 83-88, 90-95, 98-103, 105, 111-114, 118-129 & 132 above, and further in view of Mattox.

The White (386) and (309) references just discuss use of inert gases, but do not discuss other gases, such as O or N, however Mattox who is also practicing ion plating process, where an evaporation source that uses a filament is employed (figures, esp. Fig. 1; col. 2, lines 63-

col.3, line 75+). Note that Mattox provides cumulative evidence for above discussed obviousness of W filaments, and filament to substrate distances exemplified by 6 inches (col. 6, lines 61-72), as well as using pressures and voltages of interest, plus discussing cleaning (col. 4+). While Mattox also teaches ion plating using inert gases (Ar, He, etc.), a modified form of the technique uses a mixture of inert gas with some reactive gas to furnish a compound film (col. 6, lines 44-49), where example 4 on col. 7, lines 25-33 specifically suggest use of oxygen gas when forming Al_2O_3 and col. 8, lines 30-32 discusses any reactive gases, such as oxygen, nitrogen or hydrocarbons. Therefore, it would have been obvious to one of ordinary skill in the art that ion plating techniques, such as practiced in White 386 or 309 would have been expected to be useful for such compound depositions, because Mattox has shown their equivalence process wise to non-compound metal depositions, and especially since White (309) suggests ceramics including metal nitride.

9. White (682) or (631) are equivalent to Mattox for teaching use of reaction gases in ion plating depositions, such as use of oxygen. White (4,826,365) and (5,252,365) are both cumulative to White (386 or 309) for showing that the alloy of Ag-Pd is a known and useful depositant for ion plated products, hence illustrate the above generically discussed obviousness.

The White (426), (416), (401), Ide et al., Kakumoto et al, Yenawine et al, Hahn and Fujishiro et al, all cited by applicant have bias, filament and parameter teachings relevant to the claims.

10. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over White (309) (as applied above) alone, or in view of Sakamoto et al.

While White (309) teaches that metal carbide films may be deposited, he does not mention anything about the source of the carbon in the carbide, however as White

(309) teaches the possibility of multiple (2) sources of different materials, as well as deposits possibly being metal carbide, it would have been obvious for one of ordinary skill in the art to use one metal source and one carbon source, since generally they have lower melting and vaporization temperatures than their compounds, ie. metal carbides.

Alternately, hard carbon deposits are a type of ceramic coating, and Sakamoto et al shows that such C-coating may be formed via an ion plating process from evaporated carbon (abstract col. 1, lines 62- col. 2, lines 29), therefore it would have been obvious to one of ordinary skill in the art that ion plating with C-films would have been expected to be effective in the White (309) process, because Sakamoto et al shows that solid carbon sources are practical for ion plating therewith, and White generally suggest ceramics.

10. Applicant's arguments filed 1/7/02 and discussed above have been fully considered but they are not persuasive. The IDS of 3/27/02, 1/07/02 and 8/31/01 are made record.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. L. Padgett whose telephone number is (703) 308-2336. The examiner can normally be reached on Monday-Friday from about 8 a.m. to 4:30 p.m..

The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9311 for after final communications and (703) 305-6078 for unofficial communications.

M.L. Padgett/dh
May 21, 2002

May 8, 2002



MARIANNE PADGETT
PRIMARY EXAMINER
GROUP 1700